

Reply to Office Action dated December 13, 2007

REMARKS

Claims 1-6, 8-14, 16 and 19-28 are pending in this application. By this Amendment, claims 1, 3 and 9 are amended and claims 7 and 15 are canceled without prejudice or disclaimer.

Entry of the amendments is proper under 37 C.F.R. §1.116 because the amendments: (1) place the application in condition for allowance; (2) do not raise any new issues requiring further search and/or consideration; and/or (3) place the application in better form for appeal, should an appeal be necessary. More specifically, independent claims 1 and 9 are amended to include features of dependent claims 7 and 15, respectively. No new issues are raised since these features have been already examined. Entry is thus proper under 37 C.F.R. §1.116.

The Office Action rejects claim 3 under 35 U.S.C. §112, second paragraph. It is respectfully submitted that the above amendment to dependent claim 3 obviates the grounds for rejection. Withdrawal of the rejection under 35 U.S.C. §112 is respectfully requested.

The Office Action rejects the claims under 35 U.S.C. §103(a) over applicants' Admitted Prior Art (hereafter AAPA) in view of U.S. Patent 6,232,935 to Fukushima et al. (hereafter Fukushima) either alone or in combination with U.S. Patent Publication 2003/0071577 to Du et al. (hereafter Du), U.S. Patent Publication 2003/0095084 to Mizobata, U.S. Patent 6,876,340 to Kobayashi, U.S. Patent Publication 2003/0122742 to Akiba and/or U.S. Patent 7,030,839 to Higashino et al. (hereafter Higashino). The rejections are respectfully traversed with respect to the pending claims.

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Independent claim 1 recites a first driver, a second driver, and an address driver to select on-cells and to select off-cells, wherein on-cells are selected by the address driver applying data of a first voltage to the address electrode and the first driver applying a scan pulse of a second voltage to the scan electrode, and off-cells are selected by the address driver applying data of a third voltage to the address electrode and the first driver applying the scan pulse to the scan electrodes, wherein the third voltage is greater than the first voltage, and wherein the first voltage to select the on-cells is one of zero (0)V and a ground voltage GND, and wherein the second voltage is a positive voltage.

The applied references do not teach or suggest at least these features of independent claim 1, which includes features from previous dependent claim 7. More specifically, the Office Action asserts that AAPA's page 4, line 26-page 5, line 1 teaches selecting on cells by applying a voltage to the address electrode and to the scan electrode. However, the cited section of AAPA specifically describes that a positive data pulse DATA of a data voltage Vd is applied to the address electrode and a negative scan pulse SCN (or SCAN) of a negative scan voltage -Vy is applied to the scan electrode Y at a same time. See FIG. 3 showing positive pulse DATA and negative pulse SCAN. These express voltages and pulses are applied to cause an address discharge "within the on-cell supplied with the data pulse DATA." This clearly does not teach or suggest that the first voltage to select the on-cells is one of zero (0)V and a ground voltage GND, and wherein the second voltage is a positive voltage. Applicants also respectfully submit that there is no suggestion in the prior art to change voltages and/or polarities and/or driving techniques of AAPA so as to obtain the features of independent claim 1.

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When discussing previous dependent claim 7, the Office Action (on page 12) states that AAPA discloses that the second voltage (applied to a scan pulse) is a positive voltage. This is incorrect. AAPA very specifically describes that pulse SCAN has a negative scan voltage -Vy. See FIG. 3 of the present specification.

The Office Action (on pages 4-5) states that AAPA does not teach that the claimed third voltage is higher than the first voltage. The Office Action then cites Fukushima's FIG. 10A as showing that an address pulse is negative and a scan pulse is negative. The Office Action then attempts to combine AAPA and Fukushima in order "to achieve the predictable result of driving a plasma display." However, this is not sufficient motivation to completely alter AAPA's driving technique as appears to be alleged in the Office Action. The Office Action appears to state that one of ordinary skill would simply change polarities of pulses (address and scan) in order to obtain the claimed features. However, such dramatic changes to AAPA's driving technique would completely alter the accumulated wall charges on the address, scan and sustain electrodes. Further, there is no suggestion that such a change would have an expectation of success. The combination of AAPA and Fukushima is improper and without any basis in the prior art. Further, the alleged combination is based on impermissible hindsight as there is no teaching in the prior art for the combination (and the missing claim features). Rather, the only suggestion for the combination is based on applicants' disclosure (and not on the prior art).

Even further, Fukushima's FIG. 10A does not teach or suggest that on-cells are selected by an address driver applying data of a first voltage, where the first voltage is one of zero (0) V and a ground voltage GND. The Office Action's citation to Fukushima's

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negative address pulse is not one of zero (0) V and a ground voltage GND, as recited in independent claim 1.

The Office Action (on page 12) also cites Akiba's paragraph [0067] as teaching that a ground voltage is used to select on-cells. However, Akiba describes a different type of driving technique than AAPA and Fukushima. Akiba's teaching of priming pulses may not be simply combined with AAPA and/or Fukushima. For example, changing AAPA's pulse DATA (in FIG. 3) to a ground voltage would effectively eliminate any address pulse (absent other changes). This combination based on Akiba (to change AAPA's pulse DATA to ground) would not have an expectation of success (with no address pulse).

Further, Akiba's paragraph [0067] does not disclose a ground voltage to select on-cells. Paragraph [0067] does not mention a ground voltage. Therefore, even if Akiba is combined with AAPA and Fukushima, the combination does not teach or suggest the missing features of independent claim 1. The motivation to make the combination with Akiba is clearly based on impermissible hindsight as there is no suggestion in the prior art for the combination. The Office Action's alleged motivation to make the combination with Akiba is insufficient to make such a major change to AAPA.

For at least the reasons set forth above AAPA, Fukushima and Akiba do not teach or suggest all the features of independent claim 1. The other applied references do not teach or suggest the missing features of independent claim 1. Thus, independent claim 1 defines patentable subject matter.

Independent claim 9 recites initializing the cells, selecting on-cells by applying data of a first voltage to the address electrode and applying a scan pulse of a second voltage to

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the scan electrode at a time in which the data of the first voltage is applied to the address electrode, wherein the first voltage to select the on-cells is one of zero (0)V and a ground voltage GND, and wherein the second voltage is a positive voltage. Independent claim 9 also recites selecting off-cells by applying data of a third voltage to the address electrode and applying the scan pulse to the scan electrode at a time in which the data of the third voltage is applied to the address electrode, wherein the second voltage is higher than the first voltage.

For at least similar reasons as set forth above, the applied references do not teach or suggest at least these features of independent claim 9. More specifically, the applied references do not teach or suggest selecting on-cells by applying data of a first voltage to the address electrode and applying a scan pulse of a second voltage to the scan electrode at a time in which the data of the first voltage is applied to the address electrode, wherein the first voltage to select the on-cells is one of zero (0)V and a ground voltage GND, and wherein the second voltage is a positive voltage. Thus, independent claim 9 defines patentable subject matter.

Independent claim 25 recites a first driver to initialize the cells by providing a falling ramp waveform and a rising ramp waveform following the falling ramp waveform to the scan electrode during a reset period, and a second driver to apply pulses to the sustain electrode. Independent claim 25 also recites an address driver to select on-cells by applying data of a first voltage to the address electrode during the reset period, and the address driver to select off-cells by applying data of a third voltage to the address electrode during an address period. Independent claim 25 further recites the first driver applying a

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scan pulse of a second voltage to the scan electrode when the data of the first voltage is applied to the address electrode, and the first driver applying the scan pulse to the scan electrode when the data of the third voltage is applied to the address electrode during the address period, wherein the third voltage is greater than the first voltage.

The applied references do not teach or suggest at least these features of independent claim 25. When discussing independent claim 25, the Office Action (on page 10) references dependent claim 3. However, independent claim 25 specifically recites providing a falling ramp waveform and a rising ramp waveform during a reset period and applying data of a first voltage to the address electrode during the reset period. The Office Action (with respect to dependent claim 3) never addresses the feature of the first voltage during a reset period. When discussing dependent claim 19, the Office Action states that if the first voltage to select cells is zero volts, then AAPA's FIG. 3 shows that this is applied during a reset period. However, AAPA clearly shows the positive pulse DATA is applied during the address period. The Office Action's citation to Akiba's disclosure clearly may not be combinable with AAPA. Even if the alleged ground voltage in Akiba is used to modify AAPA's positive data pulse DATA, the combination would result in no pulse to select a cell. Accordingly, even if AAPA is modified by Fukushima and/or Akiba, the combination, if possibly workable, still does not suggest the claimed features relating to the on-cells. AAPA, Fukushima and Akiba do not suggest applying data of a first voltage to the address electrode during the reset period. Independent claim 25 therefore defines patentable subject matter.

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For at least the reasons set forth above, each of independent claims 1, 9 and 25 defines patentable subject matter. Each of the dependent claims depends from one of the independent claims and therefore defines patentable subject matter at least for this reason.

In addition, the dependent claims recite features that further and independently distinguish over the applied references.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance of claims 1-6, 8-14, 16 and 19-28 are earnestly solicited. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

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